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News Release

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CRREL Engineer Invents Unique Antenna

HANOVER, N.H.—A multi-band, manually-variable, high-frequency dipole antenna (U.S. Patent # 5,706.018) has been invented by Dr. Norbert Yankielun (WA1O) an electrical engineer with the U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) headquartered in Hanover, New Hampshire.

The uniqueness of this antenna system begins with the simple manual adjustment of the antenna length which facilitates efficient operation at any selected frequency within a broad segment of the HF band. The two radiating elements of the antenna consist of flexible tubular metallic braids, coaxially surrounding an insulating, high tensile strength, low-elasticity, synthetic support rope. To tune the antenna to a desired frequency, the braid is manually contracted or extended over the support rope and locked in place with simple cord locks. An accurate frequency scale, marked directly on the support rope, facilitates tuning requiring minimal operator skill. This antenna is compact when stored and is fully compatible with any mobile, portable or manpack HF communications radio. Connection of the antenna to the radio is made via coaxial cable such as RG-58U. “Flat-top”, “inverted-V”, vertical or “sloper” configurations of the antenna can be rapidly deployed from existing or expedient end-supports. Depending on the components used in construction, the antenna will dissipate to a maximum of 250 watts of continuous power and nominally weighs 5 lbs. or less.

This antenna system is suitable in dual arenas. The Amateur Radio community will find this antenna useful for “Field Day” contesting, “DX-peditions”, and general emergency and field operations as well as for permanent or base-station installations. Versions of this antenna can be easily adjusted to operate with a SWR of 1:1 on any amateur band from 160 to 10 meters (1.8 to 30 MHz).

Military, industrial, public service and emergency communications users will find this antenna effective as a rapidly-deployable, HF-band, tactical communications antenna covering the full 1.8 to 30 MHz band.

The concept used in this dipole antenna design may also be applied to other antenna configurations including wire beam and vertical antennas.

For technical information, please contact Dr. Norbert Yankielun directly at (603) 646-44639 or email: norbert@crrel.usace.army.mil. Parties exploring a licensing arrangement for this patent are encouraged to contact the CRREL ORTA (Office of Research and Technology Applications) representative, Ms. Sharon Borland at (603) 646-4735 or email: sborland@crrel.usace.army.mil.

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